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**ANALYSIS OF PROFITABILITY OF BANKS: COMPARATIVE  
STUDY OF DOMESTIC AND FOREIGN BANKS IN MALAYSIA**



**Thesis Submitted to  
Othman Yeop Abdullah Graduate School of Business,  
Universiti Utara Malaysia,  
in Partial Fulfillment of the Requirement for the Master of Science (Finance)**



Othman Yeop Abdullah  
Graduate School of Business  
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## ABSTRACT

The banking system plays a very important in the growth of economy. The objective of this research study is to analyse and compare the financial performance of domestic commercial banks and foreign commercial banks which are operating in Malaysia during the period of 2007-2016. It is also aims to examine the relationship between bank's profitability with bank size and credit risk. This study is useful for depositors, bank managers, shareholders, investors, regulators and researchers in order to provide a true picture of domestic commercial banks and foreign commercial banks. The research questions of this study are: (1) Is there any difference between both type of banks in terms of profitability? (2) Is there any relationship between bank size and the profitability of banks in Malaysia? (3) Is there any relationship between credit risk and the profitability of banks in Malaysia?. A sample of domestic commercial banks and foreign commercial banks are used in the research. The list of domestic commercial banks and foreign commercial banks is obtained from Bank Negara Malaysia's (BNM) website. Data had been generated from DataStream and banks' annual reports. The sources of banks' annual reports are from the websites of the banks and also Bloomberg. The significant of data has been determined using independent sample t-test, one-way ANOVA analysis and multiple regression. Study has concluded that domestic commercial banks are less profitable in term of Return on Average Assets (ROAA), Return on Average Equity (ROAE) and Net Interest Margin (NIM) as compared to foreign commercial banks. Whereas, for Net Interest Income/ Recurring Revenue, domestic commercial banks are significantly profitable compared to foreign commercial banks. ROAA and ROAE has a significant negative relationship with bank size and credit risk. NIM has significant positive relationship with credit risk, but no relationship with bank size. Whereas, NIIRR has significant positive relationship with bank size, but no relationship with credit risk. A few ideas are recommended for future research i.e. increase the data period, increase the independent variables and explore other possible areas like foreign Islamic banking vs domestic Islamic banking.

**Keywords:** domestic commercial banks, foreign commercial banks, comparative study, financial performance, profitability.

## ABSTRAK

Sistem perbankan memainkan peranan yang penting dalam pembangunan ekonomi. Tujuan kajian ini adalah menganalisis dan membandingkan pencapaian kewangan bank tempatan dan bank asing di Malaysia dari tahun 2007 hingga 2016. Kajian ini juga bertujuan untuk memeriksa hubungan prestasi kewangan dengan saiz bank dan risiko kredit. Kajian ini berguna kepada pendeposit, pengurus bank, pemegang-pemegang saham, pelabur, penggubal undang-undang dan pengkaji untuk memberikan gambaran sebenar keadaan kewangan bank tempatan dan bank asing. Soalan-soalan kajian ini adalah (1) Adakah terdapat perbezaan antara kedua-dua jenis bank dari segi keuntungan? (2) Adakah terdapat hubungan antara saiz bank dengan prestasi kewangan bank di Malaysia? (3) Adakah terdapat hubungan antara risiko kredit dengan prestasi kewangan bank di Malaysia? Beberapa bank-bank tempatan dan asing telah dipilih sebagai sample dalam kajian ini. Senarai bank tempatan dan asing diperolehi daripada laman sesawang Bank Negara Malaysia (BNM). Data telah diperolehi daripada DataStream dan laporan tahunan bank-bank terbabit. Sumber laporan tahunan bank-bank terbabit diperolehi daripada laman sesawang bank dan juga Bloomberg. Kepentingan data telah ditentukan dengan menggunakan ujian 'independent sample t-test', analisis sehala ANOVA dan Regresi berganda. Kajian telah menyimpulkan bahawa bank-bank tempatan adalah kurang menguntungkan dari segi purata pulangan ke atas asset, purata pulangan ke atas ekuiti dan margin faedah bersih jika dibandingkan dengan bank asing. Manakala bagi pendapatan faedah bersih/ hasil berulang, bank tempatan adalah lebih menguntungkan jika dibandingkan dengan bank asing. Purata pulangan ke atas asset dan purata pulangan ke atas ekuiti mempunyai hubungan negatif dengan saiz bank dan risiko kredit. Margin faedah bersih mempunyai hubungan positif dengan risiko kredit, tetapi tidak ada hubungan dengan saiz bank. Manakala pendapatan faedah bersih/ hasil berulang mempunyai hubungan positif dengan saiz bank, tetapi tidak ada hubungan dengan risiko kredit. Beberapa idea dicadangkan untuk penyelidikan masa depan iaitu meningkatkan tempoh data, meningkatkan pembolehubah bebas dan meneroka bidang lain yang mungkin seperti perbankan Islam asing dengan perbankan Islam domestik.

**Kata kunci:** bank tempatan, bank asing, kajian perbandingan, pencapaian kewangan, keuntungan.

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## LIST OF ABBREAVATIONS

BNM	Bank Negara Malaysia
ROAA	Return on Average Assets
ROAE	Return on Average Equity
NIM	Net Interest Margin
NIIRR	Net Interest Income/ Recurring Revenue
FCB	Foreign Commercial Bank
DCB	Domestic Commercial Bank
LPTL	Loan Loss Provision/ Total Loan
BSIZE	Bank Size
CREDITRISK	Credit Risk



# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Background of the Study**

In the recent decade, banking system in this emerging market have experience a transformation under the pressure of increase openness to international capital flows and technologies like fin-tech and financial innovation. Banking system is the most crucial segment of a country's financial system. Due to their importance in the financial stability of a country, banks are highly regulated in most countries. Most nations have institutionalized a system known as fractional reserve banking under which banks hold liquid assets equal to only a portion of their current liabilities. In addition to other regulations intended to ensure liquidity, banks are generally subject to minimum capital requirements based on an international set of capital standards, known as the Basel Accords. This is based on the revised Capital Adequacy Framework (Basel II – Risk-Weighted Assets) issued by Bank Negara Malaysia dated February 2018.

Banking plays a very important role in providing the capital or wealth. It is served as a heart of the whole economic in a country and the transaction is like a blood circulation around it. As long as the bank is still active in a country, the financial stability of the country is remained healthy. However, if there is no transaction is flowing between banking and various sector in the economy, the economy will not grow and expand.

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## APPENDIX

### *The TTEST Procedure*

**Variable: ROAA**

Local or foreign	N	Mean	Std Dev	Std Err	Minimum	Maximum
Foreign	45	1.2382	0.3168	0.0472	0.0500	1.7800
Local	47	1.1562	0.2276	0.0332	0.2600	1.5800
Diff (1-2)		0.0821	0.2748	0.0573		

Local or foreign	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
Foreign		1.2382	1.1431	1.3334	0.3168	0.2622	0.4002
Local		1.1562	1.0893	1.2230	0.2276	0.1891	0.2859
Diff (1-2)	Pooled	0.0821	-0.0318	0.1959	0.2748	0.2399	0.3218
Diff (1-2)	Satterthwaite	0.0821	-0.0328	0.1969			

Method	Variances	DF	t Value	Pr >  t
Pooled	Equal	90	1.43	0.1558
Satterthwaite	Unequal	79.639	1.42	0.1591

Equality of Variances				
Method	Num DF	Den DF	F Value	Pr > F
Folded F	44	46	1.94	0.0284

**The TTEST Procedure**

**Variable: ROAE**

Local or foreign	N	Mean	Std Dev	Std Err	Minimum	Maximum
Foreign	45	16.7293	5.5637	0.8294	0.6000	37.3900
Local	47	15.5674	4.4875	0.6546	3.2700	25.9600
Diff (1-2)		1.1619	5.0424	1.0517		

Local or foreign	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
Foreign		16.7293	15.0578	18.4008	5.5637	4.6059	7.0280
Local		15.5674	14.2499	16.8850	4.4875	3.7290	5.6363
Diff (1-2)	Pooled	1.1619	-0.9274	3.2512	5.0424	4.4012	5.9041
Diff (1-2)	Satterthwaite	1.1619	-0.9390	3.2628			

Method	Variances	DF	t Value	Pr >  t
Pooled	Equal	90	1.10	0.2722
Satterthwaite	Unequal	84.519	1.10	0.2746

Equality of Variances				
Method	Num DF	Den DF	F Value	Pr > F
Folded F	44	46	1.54	0.1520

### ***The TTEST Procedure***

***Variable: Net Interest Margin***

Local or foreign	N	Mean	Std Dev	Std Err	Minimum	Maximum
Foreign	45	2.4440	0.3684	0.0549	1.8500	3.2600
Local	47	2.3309	0.2950	0.0430	1.7300	2.8400
Diff (1-2)		0.1131	0.3329	0.0694		

Local or foreign	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
Foreign		2.4440	2.3333	2.5547	0.3684	0.3050	0.4653
Local		2.3309	2.2442	2.4175	0.2950	0.2451	0.3705
Diff (1-2)	Pooled	0.1131	-0.0248	0.2511	0.3329	0.2906	0.3898
Diff (1-2)	Satterthwaite	0.1131	-0.0256	0.2519			

Method	Variances	DF	t Value	Pr >  t
Pooled	Equal	90	1.63	0.1067
Satterthwaite	Unequal	84.243	1.62	0.1086

Equality of Variances				
Method	Num DF	Den DF	F Value	Pr > F
Folded F	44	46	1.56	0.1389

### ***The TTEST Procedure***

**Variable: Net Interest Income/ Recurring R (Net Interest Income/ Recurring Revenue)**

Local or foreign	N	Mean	Std Dev	Std Err	Minimum	Maximum
Foreign	50	67.8494	6.2737	0.8872	50.0200	79.5600
Local	50	74.0388	4.0335	0.5704	66.0500	81.0600
Diff (1-2)		-6.1894	5.2739	1.0548		

Local or foreign	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
Foreign		67.8494	66.0664	69.6324	6.2737	5.2406	7.8178
Local		74.0388	72.8925	75.1851	4.0335	3.3693	5.0263
Diff (1-2)	Pooled	-6.1894	-8.2826	-4.0962	5.2739	4.6277	6.1316
Diff (1-2)	Satterthwaite	-6.1894	-8.2871	-4.0917			

Method	Variances	DF	t Value	Pr >  t
Pooled	Equal	98	-5.87	<.0001
Satterthwaite	Unequal	83.598	-5.87	<.0001

Equality of Variances				
Method	Num DF	Den DF	F Value	Pr > F
Folded F	49	49	2.42	0.0025

**One-Way Analysis of Variance  
Results**

20:00 Thursday, November 8, 2018

**The ANOVA Procedure**

**Dependent Variable: ROAA**

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	0.15477506	0.15477506	2.05	0.1558
Error	90	6.79856842	0.07553965		
Corrected Total	91	6.95334348			

R-Square	Coeff Var	Root MSE	ROAA Mean
0.022259	22.97449	0.274845	1.196304

Source	DF	Anova SS	Mean Square	F Value	Pr > F
Local or foreign	1	0.15477506	0.15477506	2.05	0.1558

**Dependent Variable: ROAE**

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	31.034873	31.034873	1.22	0.2722
Error	90	2288.334974	25.425944		
Corrected Total	91	2319.369847			

R-Square	Coeff Var	Root MSE	ROAE Mean
0.013381	31.24993	5.042415	16.13576

Source	DF	Anova SS	Mean Square	F Value	Pr > F
Local or foreign	1	31.03487312	31.03487312	1.22	0.2722



**Dependent Variable: Net Interest Margin**

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	0.29432252	0.29432252	2.66	0.1067
Error	90	9.97364596	0.11081829		
Corrected Total	91	10.26796848			

R-Square	Coeff Var	Root MSE	Net Interest Margin Mean
0.028664	13.95082	0.332894	2.386196

Source	DF	Anova SS	Mean Square	F Value	Pr > F
Local or foreign	1	0.29432252	0.29432252	2.66	0.1067

**Dependent Variable: Net Interest Income/ Recurring R Net Interest Income/ Recurring Revenue**

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	957.716809	957.716809	34.43	<.0001
Error	98	2725.788010	27.814163		
Corrected Total	99	3683.504819			

R-Square	Coeff Var	Root MSE	Net Interest Income/ Recurring R Mean
0.260002	7.433900	5.273913	70.94410

Source	DF	Anova SS	Mean Square	F Value	Pr > F
Local or foreign	1	957.7168090	957.7168090	34.43	<.0001

## The CORR Procedure

5 With Variables:	BSIZE Income/ Recurring R	CREDITRISK	ROAE	Net Interest Margin	Net Interest
1 Variables:	ROAA				

Simple Statistics							
Variable	N	Mean	Std Dev	Sum	Minimum	Maximum	Label
BSIZE	100	8.05167	0.35844	805.16721	7.55650	8.86685	Log Total Assets
CREDITRISK	92	0.47239	0.32086	43.46000	-0.05000	1.80000	Loan Provision/ Avg Loans at Amortised Cost
ROAE	92	16.13576	5.04852	1484	0.60000	37.39000	
Net Interest Margin	92	2.38620	0.33591	219.53000	1.73000	3.26000	
Net Interest Income/ Recurring R	100	70.94410	6.09976	7094	50.02000	81.06000	Net Interest Income/ Recurring Revenue
ROAA	92	1.19630	0.27642	110.06000	0.05000	1.78000	

Pearson Correlation Coefficients	
Prob >  r  under H0: Rho=0	
Number of Observations	
	ROAA
BSIZE Log Total Assets	-0.17636 0.0926 92
CREDITRISK Loan Provision/ Avg Loans at Amortised Cost	-0.30623 0.0030 92
ROAE	0.79244 <.0001 92
Net Interest Margin	0.33180 0.0012 92
Net Interest Income/ Recurring R Net Interest Income/ Recurring Revenue	-0.21969 0.0354 92



## The CORR Procedure

4 With Variables:	BSIZE	CREDITRISK	Net Interest Margin	Net Interest Income/ Recurring R
1 Variables:	ROAE			

Simple Statistics							
Variable	N	Mean	Std Dev	Sum	Minimum	Maximum	Label
BSIZE	100	8.05167	0.35844	805.16721	7.55650	8.86685	Log Total Assets
CREDITRISK	92	0.47239	0.32086	43.46000	-0.05000	1.80000	Loan Provision/ Avg Loans at Amortised Cost
Net Interest Margin	92	2.38620	0.33591	219.53000	1.73000	3.26000	
Net Interest Income/ Recurring R	100	70.94410	6.09976	7094	50.02000	81.06000	Net Interest Income/ Recurring Revenue
ROAE	92	16.13576	5.04852	1484	0.60000	37.39000	

Pearson Correlation Coefficients Prob >  r  under H0: Rho=0 Number of Observations	
	ROAE
BSIZE Log Total Assets	-0.17483 0.0956 92
CREDITRISK Loan Provision/ Avg Loans at Amortised Cost	-0.18625 0.0755 92
Net Interest Margin	0.06374 0.5461 92
Net Interest Income/ Recurring R Net Interest Income/ Recurring Revenue	-0.18203 0.0824 92

## The CORR Procedure

3 With Variables:	BSIZE	CREDITRISK	Net Interest Income/ Recurring R
1 Variables:	Net Interest Margin		

Simple Statistics							
Variable	N	Mean	Std Dev	Sum	Minimum	Maximum	Label
BSIZE	100	8.05167	0.35844	805.16721	7.55650	8.86685	Log Total Assets
CREDITRISK	92	0.47239	0.32086	43.46000	-0.05000	1.80000	Loan Provision/ Avg Loans at Amortised Cost
Net Interest Income/ Recurring R	100	70.94410	6.09976	7094	50.02000	81.06000	Net Interest Income/ Recurring Revenue
Net Interest Margin	92	2.38620	0.33591	219.53000	1.73000	3.26000	

Pearson Correlation Coefficients Prob >  r  under H0: Rho=0 Number of Observations	
	Net Interest Margin
BSIZE Log Total Assets	-0.27492 0.0080 92
CREDITRISK Loan Provision/ Avg Loans at Amortised Cost	0.47304 <.0001 92
Net Interest Income/ Recurring R Net Interest Income/ Recurring Revenue	-0.13581 0.1968 92



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## The CORR Procedure

2 With Variables:	BSIZE CREDITRISK
1 Variables:	Net Interest Income/ Recurring R

Simple Statistics							
Variable	N	Mean	Std Dev	Sum	Minimum	Maximum	Label
BSIZE	100	8.05167	0.35844	805.16721	7.55650	8.86685	Log Total Assets
CREDITRISK	92	0.47239	0.32086	43.46000	-0.05000	1.80000	Loan Provision/ Avg Loans at Amortised Cost
Net Interest Income/ Recurring R	100	70.94410	6.09976	7094	50.02000	81.06000	Net Interest Income/ Recurring Revenue

Pearson Correlation Coefficients Prob >  r  under H0: Rho=0 Number of Observations	
	Net Interest Income/ Recurring R
BSIZE Log Total Assets	0.43665 <.0001 100
CREDITRISK Loan Provision/ Avg Loans at Amortised Cost	-0.30926 0.0027 92



## Correlation Analysis

## The CORR Procedure

1 With Variables:	BSIZE
1 Variables:	CREDITRISK

Simple Statistics							
Variable	N	Mean	Std Dev	Sum	Minimum	Maximum	Label
BSIZE	100	8.05167	0.35844	805.16721	7.55650	8.86685	Log Total Assets
CREDITRISK	92	0.47239	0.32086	43.46000	-0.05000	1.80000	Loan Provision/ Avg Loans at Amortised Cost

Pearson Correlation Coefficients Prob >  r  under H0: Rho=0 Number of Observations	
	CREDITRISK
BSIZE Log Total Assets	-0.51834 <.0001 92

### Linear Regression Results

09:25 Monday, December 10, 2018

**The REG Procedure**  
**Model: Linear Regression Model**  
**Dependent Variable: ROAA**

Number of Observations Read	100
Number of Observations Used	92
Number of Observations with Missing Values	8

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	1.71967	0.85984	14.62	<.0001
Error	89	5.23367	0.05881		
Corrected Total	91	6.95334			

Root MSE	0.24250	R-Square	0.2473
Dependent Mean	1.19630	Adj R-Sq	0.2304
Coeff Var	20.27059		

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr >  t
Intercept	Intercept	1	4.27037	0.69368	6.16	<.0001
Bsize	Log Total Assets	1	-0.35324	0.08290	-4.26	<.0001
CREDITRISK	Loan Provision/ Avg Loans at Amortised Cost	1	-0.46844	0.09264	-5.06	<.0001

### Linear Regression Results

09:25 Monday, December 10, 2018

*The REG Procedure*  
*Model: Linear Regression Model*  
*Dependent Variable: ROAE*

Number of Observations Read	100
Number of Observations Used	92
Number of Observations with Missing Values	8

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	313.99857	156.99929	6.97	0.0015
Error	89	2005.37127	22.53226		
Corrected Total	91	2319.36985			

Root MSE	4.74682	R-Square	0.1354
Dependent Mean	16.13576	Adj R-Sq	0.1160
Coeff Var	29.41799		

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr >  t
Intercept	Intercept	1	61.14313	13.57861	4.50	<.0001
BSIZE	Log Total Assets	1	-5.22448	1.62278	-3.22	0.0018
CREDITRISK	Loan Provision/ Avg Loans at Amortised Cost	1	-5.95680	1.81349	-3.28	0.0015

### Linear Regression Results

09:25 Monday, December 10, 2018

*The REG Procedure*  
*Model: Linear Regression Model*  
*Dependent Variable: Net Interest Margin*

Number of Observations Read	100
Number of Observations Used	92
Number of Observations with Missing Values	8

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	2.31004	1.15502	12.92	<.0001
Error	89	7.95793	0.08941		
Corrected Total	91	10.26797			

Root MSE	0.29902	R-Square	0.2250
Dependent Mean	2.38620	Adj R-Sq	0.2076
Coeff Var	12.53138		

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr >  t
Intercept	Intercept	1	2.47019	0.85538	2.89	0.0049
BSIZE	Log Total Assets	1	-0.03808	0.10223	-0.37	0.7104
CREDITRISK	Loan Provision/ Avg Loans at Amortised Cost	1	0.47317	0.11424	4.14	<.0001



# Linear Regression Results

09:25 Monday, December 10, 2018

## The REG Procedure

Model: Linear Regression Model

Dependent Variable: Net Interest Income/ Recurring R Net Interest Income/ Recurring Revenue

Number of Observations Read	100
Number of Observations Used	92
Number of Observations with Missing Values	8

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	756.13728	378.06864	12.50	<.0001
Error	89	2692.02020	30.24742		
Corrected Total	91	3448.15749			

Root MSE	5.49977	R-Square	0.2193
Dependent Mean	70.98652	Adj R-Sq	0.2017
Coeff Var	7.74762		

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr >  t
Intercept	Intercept	1	14.84908	15.73248	0.94	0.3478
BSIZE	Log Total Assets	1	7.05893	1.88019	3.75	0.0003
CREDITRISK	Loan Provision/ Avg Loans at Amortised Cost	1	-1.84420	2.10115	-0.88	0.3825